



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

November 21, 2013

WELL WORK PERMIT

Re-Work

This permit, API Well Number: 47-3906349, issued to RAVEN RIDGE ENERGY, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: CRUM 1A
Farm Name: BODKINS, DANIEL & LAURA
API Well Number: 47-3906349
Permit Type: Re-Work
Date Issued: 11/21/2013

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
2. Well work activities shall not constitute a hazard to the safety of persons.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: RAVEN RIDGE ENERGY, LLC

494485865	KANAWHA -39	BIG SANDY - 01	CLENDENIN - 299
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Operator ID County District Quadrangle

2) Operator's Well Number: CRUM 1A 3) Elevation: 1,089'

4) Well Type: (a) Oil X or Gas X
(b) If Gas: Production X / Underground Storage _____
Deep _____ / Shallow X

5) Proposed Target Formation(s): WEIR Proposed Target Depth: 2,300'
6) Proposed Total Depth: 2,500' Feet Formation at Proposed Total Depth: 2,000' - 2,300'
7) Approximate fresh water strata depths: 200'
8) Approximate salt water depths: 1,300' - 1,800'

9) Approximate coal seam depths: NO COAL LISTED ON TITLE

10) Approximate void depths,(coal, Karst, other): NONE

11) Does land contain coal seams tributary to active mine? NO

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

RUN 4 1/2" CASING, STIMULATE AND FRAC (ACID & WATER) A PREVIOUSLY SHOT WELL. THE WELL HAS BEEN PRODUCED
HOWEVER DUE TO THE LACK OF PRODUCTION WE WISH TO RUN 4 1/2" CASING AND FRACK THIS WELL - WE PROPOSE TO
FRAC THIS WELL IN THE SAME FORMATION PREVIOUSLY PRODUCED

13) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE	INTERVALS	CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor						
Fresh Water	9 5/8"	LS	17LBS	350'	EXISTING	CTS
Coal						
Intermediate	7"	J55	23LBS	1,850'	EXISTING	CTS
Production	4 1/2"	J55	10.5LBS	2250'	250'	150 Sacks
Tubing						
Liners						

Packers: Kind: _____
Sizes: _____
Depths Set _____

Received
OCT 15 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

3906349R

CK # 8316
\$ 2200.00
4 PERMITSWW-2A
(Rev. 6-07)

1.) Date: OCTOBER 4, 2013

2.) Operator's Well Number CRUM 1A

State 47- County 39 Permit 6349

3.) API Well No.: 47- 39 - 6349

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served: ✓
 (a) Name DANIEL AND LAURA BODKINS
 Address P.O. BOX 847
CLENDENIN, WV 25045
 (b) Name _____
 Address _____
 (c) Name _____
 Address _____

5) (a) Coal Operator
 Name _____
 Address _____
 (b) Coal Owner(s) with Declaration
 Name _____
 Address _____
 Name _____
 Address _____
 (c) Coal Lessee with Declaration
 Name _____
 Address _____

6) Inspector TERRY URBAN
 Address PO BOX 1207
CLENDENIN, WV 25045
 Telephone (304) 549-5915

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

OR Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through on the above named parties by:

 Personal Service (Affidavit attached)

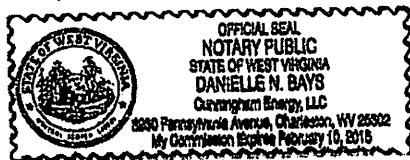
 x Certified Mail (Postmarked postal receipt attached)

 Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Well Operator RAVEN RIDGE ENERGY, LLC
 By: RYAN CUNNINGHAM
 Its: OFFICER
 Address 3230 PENNSYLVANIA AVENUE
CHARLESTON, WV 25302
 Telephone (304) 344-9291

Subscribed and sworn before me this 4th day of OCTOBER, 2013

Daniel N. Bays Notary Public
 My Commission Expires 2/10/2015
 Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:


Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
AVA CRUM, ET AL	CUNNINGHAM ENERGY, LLC SEE ATTACHED AGREEMENT	1/8	260/81

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: 
By: Its: RAVEN RIDGE ENERGY, LLC
OFFICER

Received
OCT 15 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

3906349 R

★ AGREEMENT

This agreement is made and entered into this 16th day of February, 2012 by and between Cunningham Energy, LLC, a West Virginia limited liability company and Raven Ridge Energy, LLC, a West Virginia limited liability company.

This agreement gives permission to Raven Ridge Energy to operate any leases (owned property or otherwise leased) maintained by Cunningham Energy, LLC for any and all past, current or future projects to be developed by or for Cunningham Energy, LLC.

CUNNINGHAM ENERGY, LLC

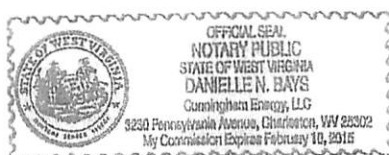

Owner

RAVEN RIDGE ENERGY


Officer

State of West Virginia
County of Kanawha

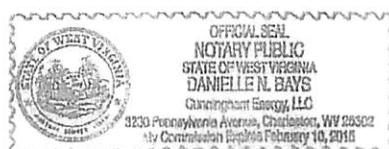
The foregoing instrument was acknowledged before me this 16th day of February, 2012 by Ryan E. M. Cunningham, Officer of Raven Ridge Energy, LLC., a West Virginia Limited Liability Company, on behalf of the company.

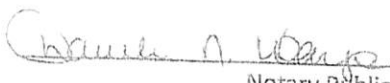



Notary Public
2/10/2015
My Commission Expires

State of West Virginia
County of Kanawha

The foregoing instrument was acknowledged before me this 16th day of February, 2012 by Ryan E. M. Cunningham, Owner of Cunningham Energy, LLC., a West Virginia Limited Liability Company, on behalf of the company.




Notary Public
2/10/2015
My Commission Expires

Received

OCT 15 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

3906349R

WW-9
(5/13)

Page _____ of _____
API Number 47 - 39 -06349
Operator's Well No. CRUM 1A

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name RAVEN RIDGE ENERGY, LLC OP Code 494485865

Watershed (HUC 10) SANDY BRANCH OF SANDY CREEK Quadrangle CLENDENIN

Elevation 1,089' County KANAWHA District BIG SANDY

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes _____ No X

Will a pit be used for drill cuttings? Yes _____ No X

If so, please describe anticipated pit waste: TU

Will a synthetic liner be used in the pit? Yes X No _____ If so, what ml.? 30 mil.

Proposed Disposal Method For Treated Pit Wastes:

- ☒ Land Application
- ☐ Underground Injection (UIC Permit Number _____)
- ☐ Reuse (at API Number _____)
- ☐ Off Site Disposal (Supply form WW-9 for disposal location)
- ☐ Other (Explain _____)

Will closed loop system be used? N/A

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. AIR, FRESH WATER

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? SOAP

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. LANDFILL

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) LIME

-Landfill or offsite name/permit number? CHARLESTON LANDFILL

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

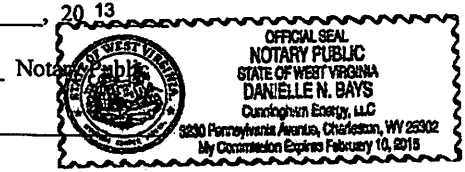
Company Official (Typed Name) RYAN E. M. CUNNINGHAM

Company Official Title OFFICER

Subscribed and sworn before me this 4th day of OCTOBER, 20 13

Daniel N. Bays

My commission expires 02/10/2015



34063492

Proposed Revegetation Treatment: Acres Disturbed 2 Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3 TON lbs/acre (500 lbs minimum)

Mulch HAY 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY31	40	ORCHARD GRASS	15
ALSIKE CLOVER	5	ALSIKE CLOVER	5
ANNUAL RYE	15		

Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Amy W. Hulan*
Comments: _____

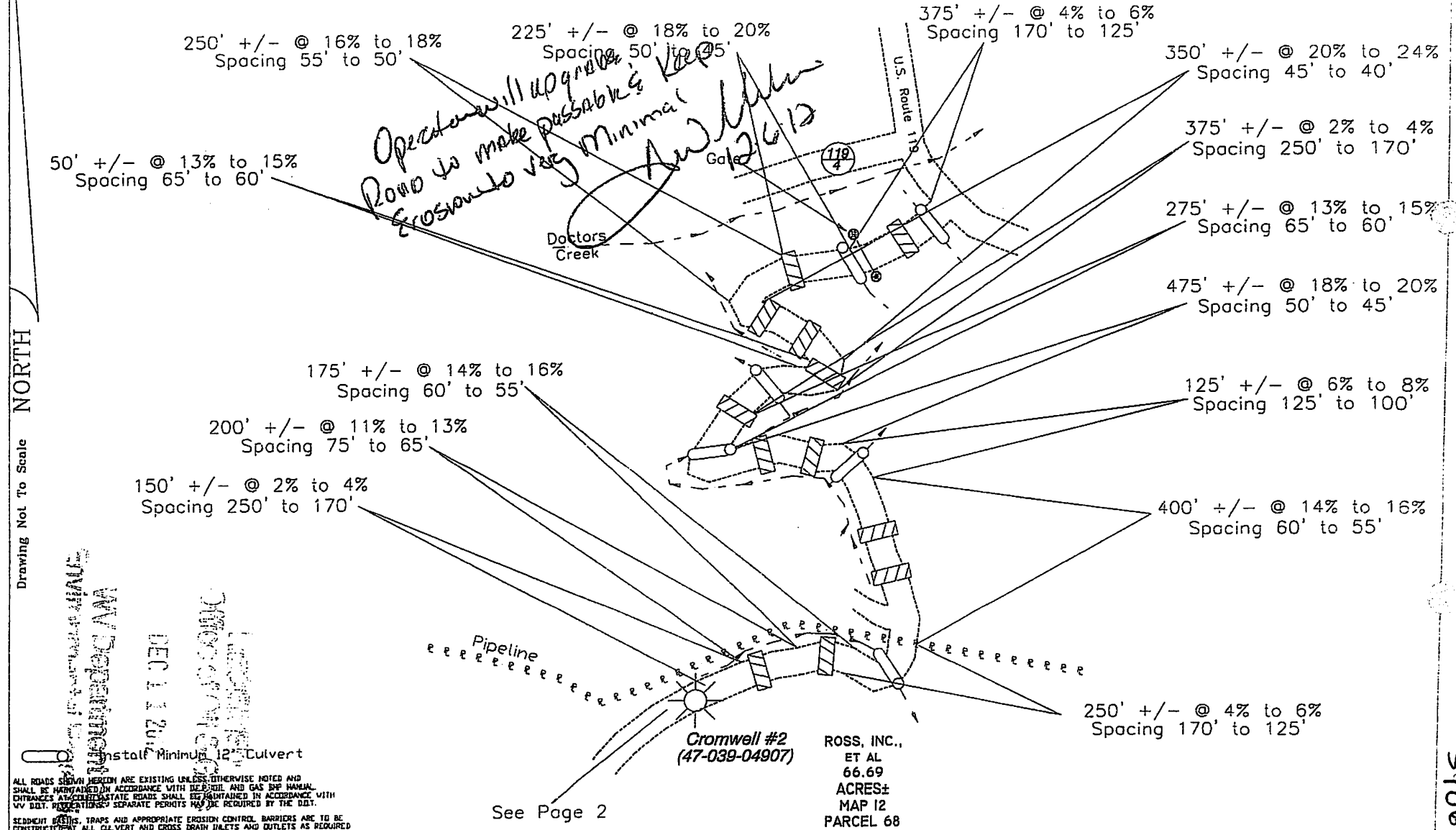
Title: *Inspecta Oil & Gas* Date: *10-4-13*
Field Reviewed? ☒ Yes ☐ No

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Office of Oil and Gas
WV Dept. of Environmental Protection

RAVEN RIDGE ENERGY, LLC. Crum #1A

Form W-9

Page 1 of 3



ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH DEPT. OF HIGHWAY AND GAS BHP MANUAL. ENTRANCES TO CONFINED SPACE SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. SEPARATE PERMITS MAY BE REQUIRED BY THE D.O.T.

SEDIMENT BARRIERS, TRAPS AND APPROPRIATE EROSION CONTROL MEASURES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH DEPT. OF HIGHWAY AND GAS BHP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PREVENT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED.

EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFYING TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN.

CONTRACTORS/COMPANY ARE RESPONSIBLE FOR LOCATING UTILITIES WHETHER SHOWN ON THIS PLAN OR NOT.

TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER.

STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304) 354-7035 E-MAIL: hupp@frontiernet.net

Drafted BY:

DE

Date Drafted:

06/13/12

Job Number:

W20122144

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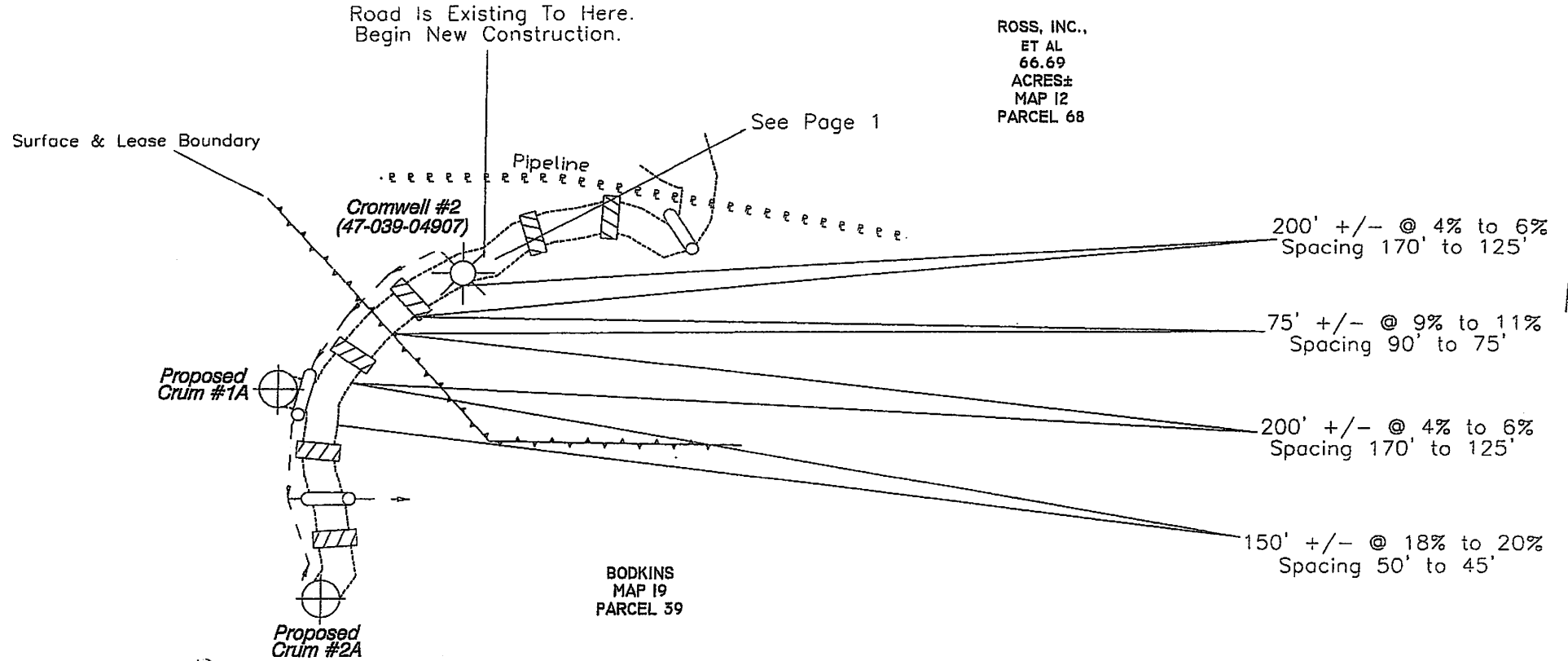
Office of Oil and Gas
WV Dept. of Environmental Protection

3906349R

Form W-9

RAVEN RIDGE ENERGY, LLC. Crum #1A

Page 2 of 3



ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH DEP. OIL AND GAS REGULATIONS. ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV DLT. REGULATIONS. SEPARATE PERMITS MAY BE REQUIRED BY THE DLT.

SEDIMENT BASINS, TRAPS AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND DRAIN TRAPS AND OUTLETS AS REQUIRED IN THE WV DEP. OIL AND GAS MAP HAVING FIELD CONDITIONS CHECK NOTICED AND RECORDS MAY PROHIBIT DUCT TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED.

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TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER.

STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304) 354-7035 E-MAIL: hupp@frontiernet.net

Drafted BY:

DB

Date Drafted:

06/13/12

Job Number:

W20122144

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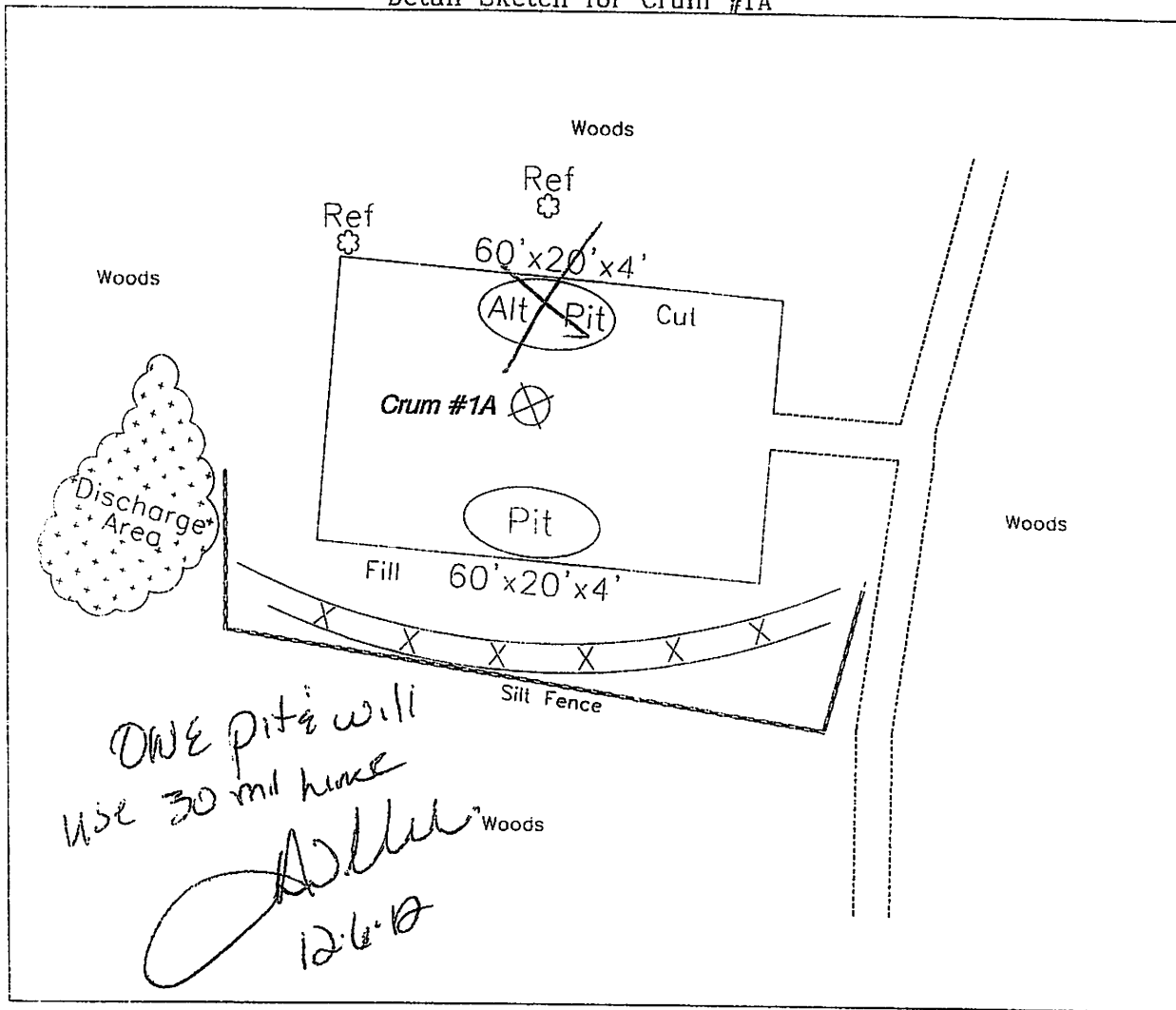
OCT 15 2013

Office of Oil and Gas
and
Environmental Protection

3906349R

RAVEN RIDGE ENERGY, LLC.
Crum #1A

Detail Sketch for Crum #1A



★ Pit NEED TO BE
IN ORIGINAL GROUND
OIL CUT.

Install Minimum 12" Culvert

ALL ROADS SHOWN HEREIN ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH D.E.P. OIL AND GAS BMP MANUAL. ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.D.T. REGULATIONS. SEPARATE PERMITS MAY BE REQUIRED BY THE DDT.

SEDIMENT BASINS, TRAPS AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV D.E.P. OIL AND GAS BMP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED.

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TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER. STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.

HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304) 354-7035 E-MAIL: hupp@frontiernet.net

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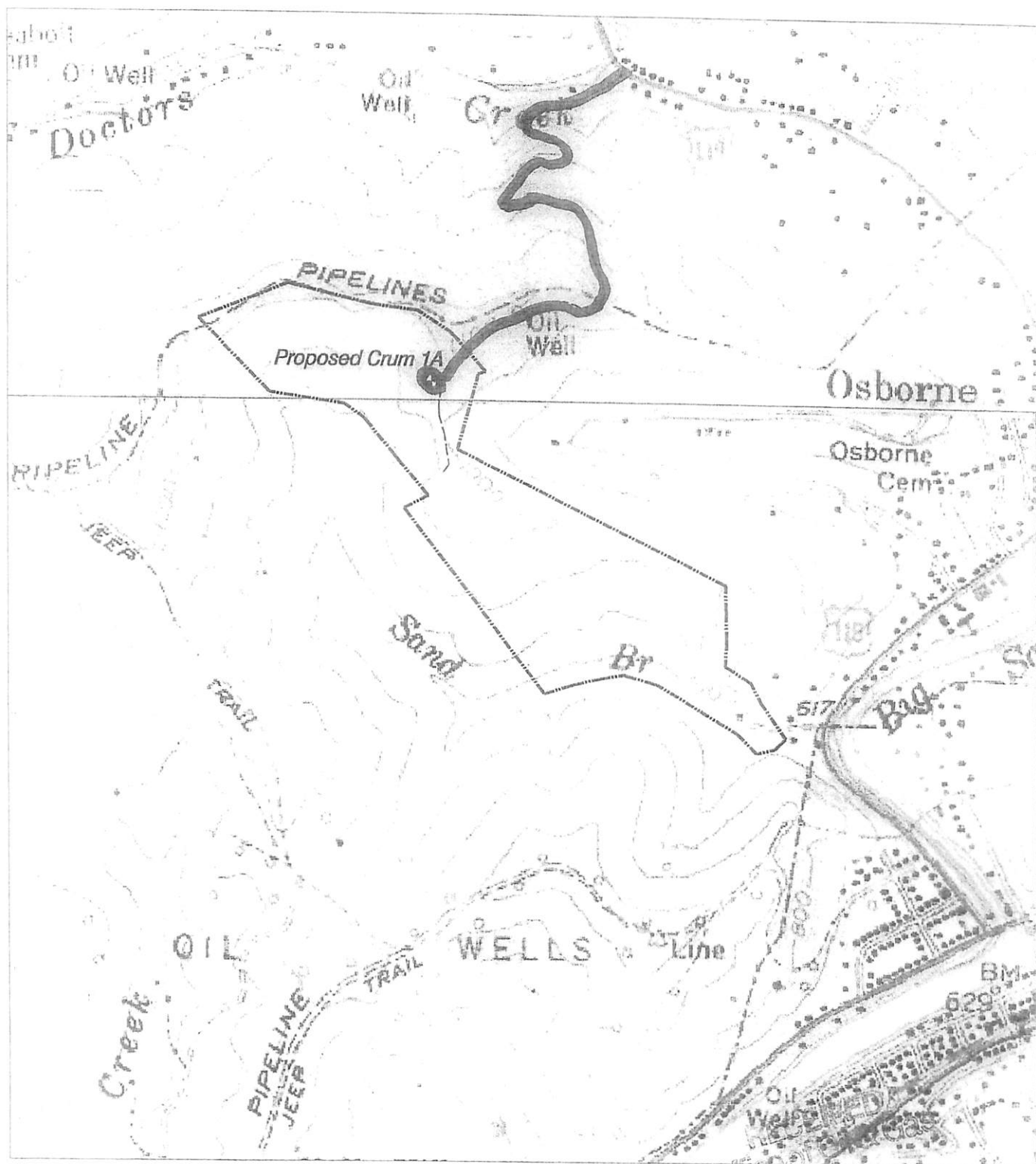
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Office of Oil and Gas
WV Dept. of Environmental Protection

RAVEN RIDGE ENERGY, LLC.

CRUM #1A



HUPP Surveying & Mapping

P.O. BOX 647 GRANTSVILLE, WV 26147
 PH: (304) 354-7035 E-MAIL: hupp@frontiernet.net

1" = 1000'
 Clio Quad

Raven Ridge Energy, LLC
 3230 Pennsylvania Ave.
 Charleston, WV 25302

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